

REMARKS

This is in response to the Office Action mailed on January 9, 2007 in which claims 1-26 were rejected and claims 27 and 28 were withdrawn. Of the rejected claims, each claim was rejected under 35 U.S.C. § 103(a) as being unpatentable over Weaver et al. U.S. Patent No. 4,341,725 (hereinafter the Weaver patent) or unpatentable in view of the Weaver patent and at least one additional reference.

Elections/Restrictions

Applicant acknowledges that an election was made by David Fairbairn on December 28, 2006 in response to a restriction requirement. The elected invention was Invention I, which includes claims 1-26. With this Amendment, Applicant affirms this election.

Claims 9-16, 27 and 28 have been cancelled with this amendment.

Claim Rejections under U.S.C. § 103

Claims 1, 2, 4-8 were rejected under U.S.C. § 103(a) as being unpatentable over Weaver (US Patent 4,341,725) in view of Whalen (US Patent 5,824,250).

With this Amendment, claim 1 is amended to require:

- a. using a rapid prototyping process to produce a disposable mold having a cavity with microcircuit dimensions which has the shape of the desired ceramic article; and
- b. filling said cavity with microcircuit dimensions with a ceramic slurry of ultrafine ceramic particles which includes a liquid carrier.

The Weaver patent teaches slip casting and freeze casting to produce molds and ceramic castings with ordinary dimensioned features. Claims 1, 2, 4-8, as amended, refer to cavities with microcircuit dimensions filled with a slurry of ultrafine ceramic particles. The surface finish and topographical features of a fired ceramic part scale with the particle size of the powder used to form the part. To produce parts

with microcircuit dimensions such as those shown in Auxier et al. U.S. Patent No. 6,247,896, FIGS 3 and 4, ultrafine (i.e. submicron) powders are required.

The Whalen patent teaches that rapid prototyping processes can be used to produce molds. However, molds containing features with microcircuit dimensions cannot be produced by the equipment or methods taught in the Whalen patent. As shown in FIG. 3 of the Whalen patent, rapid prototype (RP) patterns are manufactured layer by layer (or slice by slice as quoted in the text). The finest discernable feature in an RP pattern relates directly to the layer thickness. The layer thicknesses in examples 1 and 2 in Whalen were 0.010 inch and 0.006 inch respectively. These are not microcircuit dimensions.

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Weaver patent in view of Whalen U.S. Patent No. 5,824,250 and further in view of Downing (US Patent 3,885,005). None of the authors addressed the production of parts with microcircuit dimensions. Weaver used 3 micron and coarse (100 F) silicon carbide powders. Downing teaches that the particles should be coarse in size, i.e. at least 70 percent of said particles being +200 mesh up to one-half inch in size and is not applicable in this case.

Claims 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Weaver patent in view of Whalen, and Campion, (U.S. Patent 5,503,218).

Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Weaver patent in view of Whalen, and Campion, and further in view of Downing.

Claims 20-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weaver in view of Whalen, and Campion.

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Weaver patent in view of Whalen and Campion and further in view of Sellers, (U.S. Patent No. 5,720,431).

Claim 20 has been amended to correct a typographical error.

Claims 2-8 and 17-26 all depend from Claim 1, and are allowable therewith.

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Application No.: 10/761,908

8-

CONCLUSION

This Amendment places the application in condition for allowance. Notice to that effect is requested.

Respectfully submitted,

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4/9/07

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